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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/761,809	01/21/2004	James H. Brewster	41890-01677	2299

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EXAMINER

WYSZOMIERSKI, GEORGE P

ART UNIT

PAPER NUMBER

1742

DATE MAILED: 09/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/761,809

**Applicant(s)**

BREWSTER ET AL.

**Examiner**

George P. Wyszomierski

**Art Unit**

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 167-235 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 167-235 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

Art Unit: 1742

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 167-170, 172-174, 182-186, 191, 195-203, 205-207, 218-222, 223, 225, 226, 228, and 232-235 are rejected under 35 U.S.C. 103(a) as obvious over Spitz et al. (U.S. Patent 3,840,391).

Spitz discloses using an ultrasonic generator to force a uniform aerosol including droplets of an aqueous solution of a metal compound and a carrier gas into a heated zone, where the heat causes droplets of the solution to vaporize. The droplets are of a size as presently claimed; see Spitz column 3, lines 18-24. With respect to the present "automatically controlled at the direction of an electronic processor" limitation, the examiner's position is that the electrical circuitry which turns the ultrasonic generator of the prior art on and off fully meets this limitation. With regard to the various functions that are "automatically" controlled, commenced, etc. in the instant claims, the Spitz patent discloses varying such parameters as power, frequency, concentration of aerosol, flow rate of gas, etc. to produce desired results; any changes in these parameters in order to better control the resulting products are held to fall within the scope of the various "automatic" steps as presently claimed. Further, one of skill in the art would want to control such parameters in an efficient manner, and the use of electronic sensors, switches, etc. would provide a far greater degree of control than could possibly be achieved through manual observation and operation. With respect to instant claims 219-221, it is initially noted that these claims are directed to completely optional steps, i.e. the claims recite a feature that only occurs in the event that the generating step is automatically interrupted.

Even so, it would have been an obvious expedient to one practicing the Spitz process to, in the event that one wishes to interrupt that process, to cease supply of the precursor, the carrier gas, and heat input in order to avoid waste of materials and energy in the prior art process. With respect to new claims 233-235, these claims are directed entirely to mental steps associated with the processes of the independent claims (i.e. where one selects and processes instructions from memory) and thus cannot serve to render an otherwise known process patentable.

Spitz forms a film using the above process, as opposed to the presently claimed forming of particles. However, note that Spitz column 3, line 10 indicates that one conducts the prior art process in order to obtain a mean particle size of a few microns. Further, the present claims do not define any particular size of any particles formed in the claimed process, and performing the Spitz process on a small area of a substrate would involve forming a "particle" within the broad meaning of the term in the instant claims. Thus, a prima facie case of obviousness is established between the disclosure of Spitz et al. and the presently claimed invention.

3. Claims 180 and 213-217 are also rejected under 35 U.S.C. 103(a) as being unpatentable over Spitz et al.

a) Spitz does not disclose automatically testing a flow path of the aerosol stream for leaks prior to generating the stream, as required by instant claim 180. The examiner's position is that one of ordinary skill in the art would be motivated to include such a step in any process which involves the use of aerosolized solutions in order to avoid

i) potential waste, and

ii) potential spills of toxic chemicals and solutions

in processes of the prior art. It is axiomatic that one would desire to be assured that the equipment that is to be used in a given chemical process will be capable of properly performing

the functions intended. Therefore, to incorporate the presently claimed pressure testing step prior to commencing the operations as described by Spitz would be considered an obvious modification of what is disclosed by Spitz et al.

b) While Spitz does not specify the various numerical limitations of claims 213-216, processes including these limitations would fall within the purview of the Spitz process. This is especially true with regard to claims 215 and 216 in light of Spitz column 3, line 10.

c) With respect to claim 217, the use of multiple generators in the same manner as the use of one generator in the prior art, to achieve nothing more than a cumulative and predictable effect thereof, cannot be said to define a patentable distinction from the prior art process.

Thus, the Spitz et al. disclosure is held to establish a prima facie case of obviousness of these claims as well.

4. Claims 171, 187, 204 and 227 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spitz et al. in view of Wellinghoff et al. (U.S. Patent 4,801,411).

Spitz does not disclose the use of a spray nozzle atomizer as recited in the instant claims. Wellinghoff indicates that the use of spray atomizers (as presently claimed) was an art recognized equivalent at the time of the invention to the use of the ultrasonic generators as described by Spitz. Note the comparison of the two systems in Wellinghoff column 4, line 43 through column 8, line 68. Therefore, the combination of Spitz et al. and Wellinghoff et al. would have taught the claimed invention to a person of ordinary skill in the art.

5. Claims 177, 193, 209 and 230 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spitz et al. in view of Jacobsen et al. (U.S. Patent 5,852,768).

Spitz does not disclose heating in a flame reactor as recited in the instant claims. Jacobsen indicates that it was known in the art, at the time of the invention, to employ flame reactors as heaters in conjunction with a process of forming powders of uniform particle size from ultrasonic generators, i.e. in a process analogous to that of Spitz. Thus, the combination of Spitz et al. and Jacobsen et al. would have rendered a process as presently claimed obvious to one of ordinary skill in the art.

6. Claims 178, 194, 210, and 231 (as amended) are rejected under 35 U.S.C. 103(a) as being unpatentable over Spitz et al. in view of Durr (U.S. Patent 5,180,949).

Spitz does not disclose heating in a plasma reactor, as recited in the instant claims. Durr indicates that it was known in the art, at the time of the invention, to use a plasma induction coil for the purpose of heating an aerosol-containing material; see claim 1 of Durr. Thus, the combination of Spitz et al. and Durr would have taught the claimed invention to a person of ordinary skill in the art.

7. Claims 175, 179, 181, 188, 189, 190, 211, 212 and 224 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spitz et al. in view of Ranade et al. (U.S. Patent 5,928,405).

Spitz, described supra, does not disclose the use of cooling gas in order to cool the material produced in the Spitz process. Ranade et al. indicates that it was conventional in the art, at the time of the invention, to employ cooling gases to cool powders produced from aerosol thermolysis of a solution, i.e. from a process analogous to that of Spitz. All statements made supra with respect to one or more parameters being "automatically" controlled apply equally as

well in this instance. Therefore, the combination of Spitz et al. and Ranade et al. would have taught a process as presently claimed to a person of ordinary skill in the art.

8. Claims 176-235 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-104 of U.S. Patent No. 6,699,304.

Although the conflicting claims are not identical, they are not patentably distinct from each other because both the instant claims and the '304 claims are directed to processes of making particulate products by heating of an aerosol stream produced from an ultrasonic generator. While the '304 claims do not refer to any of the steps that are performed "automatically" as recited in the instant claims, the examiner's position is that the act of turning the power on and off to the ultrasonic generators of the '304 claims, and/or of controlling the temperature of the heater and amounts of the aerosol and carrier gas in the '304 claims amount to "automatic" control of these parameters in a broad sense as required by the instant claims.

Thus, no patentable distinction is seen to exist between the process as defined in the instant claims and that defined in the claims of the '304 patent.

9. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir.

Art Unit: 1742

1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

10. In a response filed July 12, 2006, Applicant states that the only required steps of the claimed "batch initiation operations" and "batch termination operations" are commencing and ceasing generation of an aerosol stream, and that the above operations can encompass many steps as set forth in the present specification. The examiner accepts Applicant's explanation in this regard, and the claims are no longer rejected under 35 USC 112.

In response to the rejections under 35 USC 103, Applicant alleges that the presently claimed feature of operations being "automatically controlled at the direction of an electronic processor processing instructions for manufacture of the particles" distinguishes the claimed invention from the prior art processes. The examiner respectfully disagrees, for reasons set forth in the rejection, i.e. one of ordinary skill in the art would want to conduct the prior art process in an efficiently a manner as possible, and the use of electronic sensors, switches, etc. in the prior art processes would provide a far greater degree of control of the various inputs necessary in the process steps of the prior art than could possibly be achieved through manual observation and operation.



Art Unit: 1742

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Wyszomierski whose telephone number is (571) 272-1252. The examiner can normally be reached on Monday thru Friday from 8:00 a.m. to 4:30 p.m. Eastern time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King, can be reached on (571) 272-1244. All patent application related correspondence transmitted by facsimile must be directed to the central facsimile number, (571)-273-8300. This Central FAX Number is the result of relocating the Central FAX server to the Office's Alexandria, Virginia campus.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GPW  
September 15, 2006

  
GEORGE WYSZOMIERSKI  
PRIMARY EXAMINER  
GROUP 1760